

to the extent of from one and one-half to three centimetres. This elongation is due more to separation of the spinous processes than to separation of the bodies of the vertebræ. The body as a whole is lengthened during the process of suspension from two to three centimetres. In a second series of experiments Dr. Bonuzzi found that by bending the body forcibly forward so as to bring the knees in contact with the abdomen, the spinal cord and cauda equina are subjected to considerable stretching. Having made an opening into the vertebral column and inserted a needle perpendicularly to the long axis of the cord, he noted that on bending the body forcibly forward, the needle was carried downwards for a distance from eight to twelve millimetres, the spinal cord becoming thinner and more resistant, the cauda equina being extremely tense. Traction on the sciatic nerve stretched the cauda equina, but did not draw down the cord more than two millimetres. Progressive and lasting improvement resulted from forced flexions in the case of a woman suffering from locomotor ataxia, thus securing the advantages of suspension without its drawbacks.

L. F. B.

THE WARNINGS OF GENERAL PARESIS OF THE INSANE.

In the "British Medical Journal," April 5, 1890, is Dr. George H. Savage's paper with the above title. Extreme difficulty is often found in distinguishing between causes and early symptoms; for in many cases what may be causes of general paresis, in others may be signs of the disease. Possibly drink, extravagance, and sexual excess alone or combined may start the degenerative process; but it is also certain that each or every one of these may be early signs of loss of the highest self-control.

General paralysis is a degeneration rather than a specific disease, which is most commonly met with in middle-aged married men, inhabitants of cities, flesh-eaters, and drinkers of alcohol. It is not common among the congenitally deficient or among epileptics. It is a frequent follower of constitutional syphilis, especially if this disease has affected the higher nervous organs or their envelopes, and is not uncommonly related to head injury or to causes of nerve-tissue disease, such as those produced by lead. A feeling of fatigue is an important early symptom, associated with indecision, doubt, and a tendency to look on the dark side of things, or even hypochondriacal weakness. It may precede other symptoms by a year or so, and be replaced for a

time by a morbid bouyancy. This condition is only valuable as a symptom in connection with others, inequality of the pupils, loss of power of expression by speech or writing, etc. Ataxic symptoms may precede general paresis by an almost indefinite period, and may be its first manifestation, in which case syphilis is included in the history. Temporary aphasia is another important warning symptom. Alteration in handwriting is another sign of moment. Some patients give up writing, or alter their mode of holding the pen, for a year or more before showing other symptoms of general paresis. Facial expresion is early affected. Friends say the patient has developed a "fat face," for obliteration of lines give an aspect of fatness. At the same time the skin may become greasy, or there may be unilateral sweating. Ptosis and external strabismus are rare as symptoms of general paresis; but they are common as expressions of a morbid process that ends in general paresis. Allied to aphasia are slight and partial losses of power or sensation. Such attacks are usually related to slight fainting fits. Headache and facial neuralgia are the most common forms of pain preceding general paresis. Generally headache is rare among the insane. Double sciatica is a symptom not to be overlooked. The optic discs may give much information. Impairment in the sense of hearing, taste, and smell are not uncommon.

The gradual loss of power of social accommodation is one of the earliest and most marked of warnings. Stupid stealing and thoughtless indecency are noticeable defects. Changes of temper and character precede general paresis. The sudden outbreak of mania is a precursor of this disease, as may be also epileptoid seizures at irregular intervals, and hysterical or hystero-epileptic fits. General paresis has a local origin in many cases, and the surgeon may yet scrape out necrosed brain as necrosed bone is now treated. But there is small measure of hopefulness possible, for degeneration follows on the predisposing condition. The fungi grow on the dung-heap, but they do not form it. L.F.B.

DOUBLE ATHETOSIS.

The "*Progrès Médical*," January 18, 1890, contains a notice of an Italian work on this subject by Roberto Mas-salongo. The author's researches have convinced him that only a limited number of cases have been reported: ten in France, four in England, eight in Germany, and nine in America. Four have come under his own personal obser-